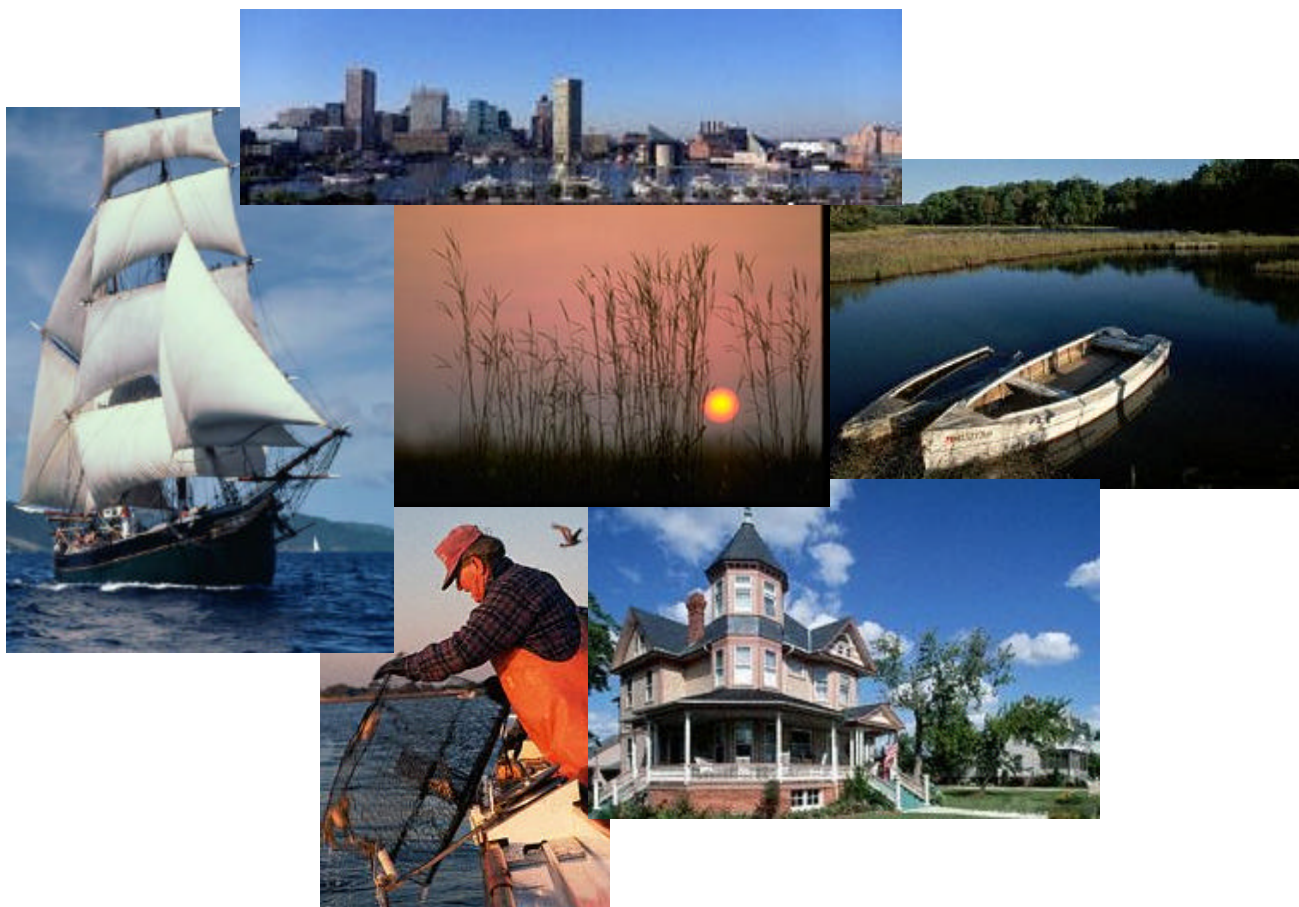




Maryland
Department
of the
Environment

Maryland Department of the Environment 2000 End of Season Ozone Report



November 2000



2000 Weather Summary

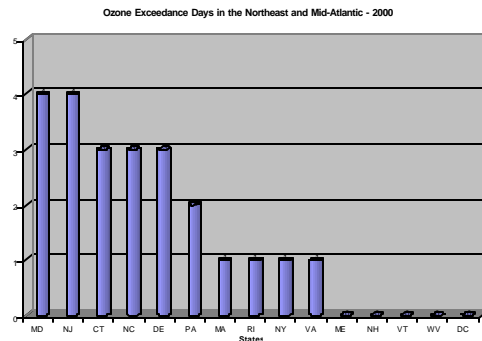
The summer of 2000 will be remembered for below normal levels of ozone, green grass and ruined summer vacations. For the record, the summer of 2000 saw 45 % of the days record rainfall totals of 0.01 inches or more. With the rainfall came cloud cover which helped keep the region cooler than normal. In fact, the region normally averages 31 "90 degree days" per summer. In this atypical summer there were just 11 such days, and nine of them occurred before the start of July.

Normally the summers in Baltimore are influenced by the dominant weather feature of the Bermuda High. This area of high pressure is usually positioned in the Atlantic just south east of the Maryland region, and helps keep the area hazy, hot and humid. Instead the summer weather of 2000 was dominated by a wacky weather pattern that set up in early June and never released its grip on the Baltimore region. This weather pattern featured a series of cut off lows moving slowly along the Canadian – U.S. border. These cut off lows served to keep the region under the influence of a humid unstable air mass. This type of air mass resulted in a daily chance of rain shower activity. As a result of this unusual weather pattern, the Bermuda High, was kept far enough out in the Atlantic to be a non-factor in the forecast.

2000 Ozone Exceedances (ppb)						
	Eastern Standard Time (EST)					
	1200	1300	1400	1500	1600	1700
12-May-00						
Fairhill					128	127
13-May-00						
Greenbelt		128				
9-June-00						
Fairhill			129			
Millington			128	127	127	127
10-June-00						
Aldino		136	136			
Davidsonville	135	138				
Edgewood	125					
Essex					133	
Ft. Meade		126	140	143	126	
Greenbelt		127	143	129		
Suitland		127	127			
Fairhill	133	138	139	146	140	133
Millington			138	134	131	

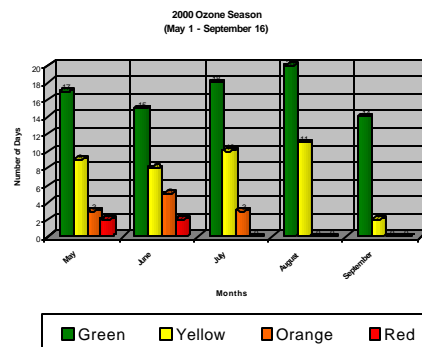
2000 Ozone Summary

The ozone season (or lack there of) in Maryland and for that matter the entire Northeast and Mid-Atlantic was very mild. Maryland and New Jersey lead the pack of 14 states (and the District of Columbia) with the "honor" of having the most 1-hr ozone exceedances in the Northeast/Mid-Atlantic, with a total of 4.



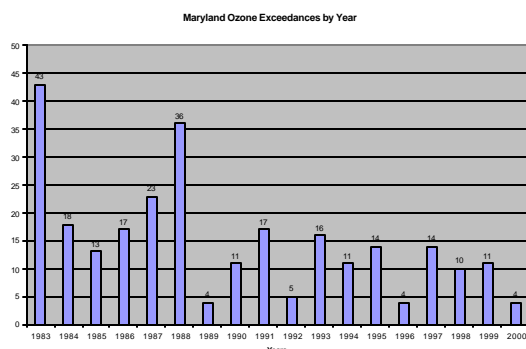
In Maryland, there were 4 code red days (Bad Air Days), 11 code orange days, 40 code yellow days, and 84 code green days. The 4 code red days observed in 2000 was significantly down from the 11 code red days observed in 1999. The weather patterns discussed earlier were responsible for the limited number of code red days in 2000.

Ozone, which is measured hourly, exceeds the federal health standard when ozone values are equal to or exceed 125 parts per billion (ppb). These exceedances are referred to as **Code Red** conditions. The term **Code Red** is used to alert the general public, that the air quality is considered unhealthy.



Ozone – An Historical Perspective

So, how did this summer compare with those of the 80's and 90's? This year there were a total of four bad air days. During the summer months of the 1980's the region had on average 22 bad air days. In the 1990's the average number of bad air days had been reduced to 11. This reduction of 50 percent is a clear indication that pollution control measures adopted by Maryland have had the desired effect of reducing ozone levels in the region.



A Regional Problem – Ozone Transport

One question that is constantly asked is, "can pollution and ozone be transported into Maryland from other States?" The answer to this question is a definite yes.

This is based on data obtained by the University of Maryland research aircraft flights that are

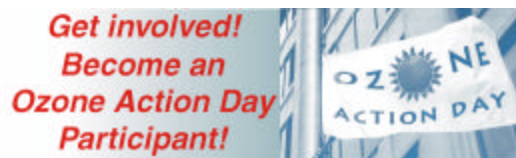
funded by the Maryland Department of the Environment (MDE). The pollutant measurements made during the research aircraft flights, has revealed elevated levels of ozone flowing into the Maryland region on upper air winds from the west during locally high ozone events. To further support that pollution and ozone can be transported via upper level winds are the high levels of ozone that have been recorded in rural areas such as the Shenandoah Valley located in Virginia. Due to the transport of pollutants and ozone, Maryland will require the help of other states to reduce the number of bad air days in the future.



Another recent finding related to pollution and ozone transport, has been the discovery of a low level jet (LLJ) that sometimes forms at night just east of the Appalachian mountain chain. This LLJ is just like a fast moving river of air, which moves at speeds of approximately 20 m/s (45 mph) and tends to form approximately 300 meters (1,000 feet), above the surface. It is hypothesized that the LLJ might transport pollution from the south into the Maryland region. Further research in the future will need to be completed to determine if this is true or not.

2000 Ozone Season Outreach Highlights

Ozone forecasting took an early start this year, as meteorologists began providing daily forecasts on May 1st. This effort proved to be very important as air monitors recorded three Code Orange and two Code Red days in the second week of the month. The Baltimore/Washington region does not typically experience poor air quality until late May through early September. This particular early event did prove to be one of the most severe for the entire ozone season.



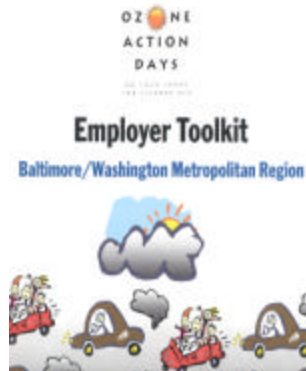
Air quality notification systems greatly improved during the 2000 ozone season. MDE and the Metropolitan Washington Council of Governments (COG) developed new fax formats incorporating the new "Code Red / Bad Air Alert" logo. Forecasts were consistently reported on MDE's Air Quality Hotline and posted on MDE, COG, ENDZONE the Weather Channel, and EPA's AIRNOW web sites throughout the season. In addition, USA Today began printing ozone forecasts for many major metropolitan areas including the Baltimore and Washington, D.C. area. Maryland also improved its outreach efforts by providing an email forecasting service in addition to forecast faxes.

A successful and informative bi-regional conference helped to kick off the 2000 ozone season. The 2nd annual ENDZONE

Partners Ozone Action Days Conference and Exposition was held in Washington D.C.. Seminars were presented on basic air quality issues, Ozone Action Days plan development, meteorological influences on local air pollution, and several outstanding health-related presentations. Many air quality experts were on hand to answer questions, distribute information and showcase new interactive displays.

Employer Toolkit

With 365 businesses and organizations participating in the Ozone Action Days (OAD) program throughout the region, OAD team members developed a guide to help partners craft and manage an effective outreach program. This guide took shape in the Employer Toolkit. The Employer Toolkit provides partners with many ideas and examples of how to reach out to employees and implement pollution reducing activities throughout the home and the workplace. The Toolkit also includes a participant sign up / material request form, example Code Red alert notices and sample newsletter articles.



Code Red 2000-2001 Campaign

Over the past several years, Clean Air Partners (formerly known as Endzone Partners) has effectively utilized a modest advertising and public relations budget to encourage residents throughout the Baltimore and Washington region to adopt voluntary actions in response to "Code Red Bad Air" alerts, and to reduce the number of "Code Red" days by their participation. Clean Air Partners has launched a new marketing campaign in 2000 designed to achieve wide



ranging media coverage throughout the region. A new strategy for 2001 includes targeting children, teens, and young adults pre-season to help "drive home" the clean air message and gain the support of households to become involved in the program.

2001 Ozone Season

AIRWATCH

Maryland is in the process of developing several new and exciting features for communicating air quality information to the public. Beginning in May 2001, the MDE Air Quality web site will launch AIRWATCH; a "real-time" air quality data notification system. As ozone levels are collected from 16 monitors throughout the State, this data will be updated hourly in a graphical interactive display. An image of Maryland will be color coded to represent air quality levels recorded within the counties hosting ozone monitors. Users may click on the map to get more detailed county information including ozone levels throughout the course of the day at specific monitors. Be sure to log on at <http://www.mde.state.md.us/arma>.



e-alert

AIRWATCH will also be closely supported by the new "e-alert" email notification system. e-alert is a free service provided by MDE which automatically notifies you by e-mail when high concentrations of ground level ozone are measured in your geographical area of concern throughout Maryland. The e-alert system may be customized upon signing up, so that users may tailor the system to notify them when

ozone levels meet specific cut-points at the monitors or regions they specify. e-alerts are issued throughout the summer ozone season, May through September.

Coming soon to MDE's web site: Just complete the "Subscribe to e-ALERT" form and you will be automatically notified of ozone episodes as they occur.

EPA's Ozone Pollution Map



Improvements to infrastructure and geographic

coverage will continue for the ozone Mapping System in 2001. Enhancements will be made to the computer systems that collect the data and create the animated ozone maps on the web. The system will be improved to handle more data from additional regions and speed the process of updating the maps to the Internet. The geographic expansion of ozone coverage for 2001 will also include air monitors from Canada.